

# Notice of Allowability

Application No.

09/970,552

Examiner

Shervin Nakhjavan

Applicant(s)

JOLLY, MARIE-PIERRE

Art Unit

2621

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_\_.
2. ☒ The allowed claim(s) is/are 1-21.
3. ☒ The drawings filed on 04 October 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 2-11-02, 4-14-03
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. The numbering of claims 11-22 is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. Claims must be numbered consecutively beginning with the number next following the highest numbered claims previously presented. Misnumbered claims 11-22 have been renumbered as 10-21. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Claim 11, Line 1, change "11." to read --10.--;

Claim 12, Line 1, change "12." to read --11.--;

Claim 13, Line 1, change "13." To read --12.--;

Claim 13, Line 1, change "claim 12," to read --claim 11,--;

Claim 14, Line 1, change "14." to read --13.--;

Claim 14, Line 1, change "claim 12," to read --claim 11,--;

Claim 15, Line 1, change "15." to read --14.--;

Claim 15, Line 1, change "claim 14," to read --claim 13,--;

Claim 16, Line 1, change "16." to read --15.--;

Claim 16, Line 1, change "claim 12," to read --claim 11,--;

Claim 17, Line 1, change "17." to read --16.--;

Art Unit: 2621

Claim 17, Line 1, change "claim 12," to read --claim 11,--;

Claim 18, Line 1, change "18." to read --17.--;

Claim 18, Line 1, change "claim 12," to read --claim 11,--;

Claim 19, Line 1, change "19." to read --18.--;

Claim 19, Line 1, change "claim 18," to read --claim 17,--;

Claim 20, Line 1, change "20." to read --19.--;

Claim 20, Line 1, change "claim 12," to read --claim 11,--;

Claim 21, Line 1, change "21." to read --20.--;

Claim 21, Line 1, change "claim 12," to read --claim 11,--;

Claim 22, Line 1, change "22." to read --21.--.

### **REASONS FOR ALLOWANCE**

2. The following is an examiner's statement of reasons for allowance: claims 1-21 are allowed because, the prior art of record specifically Levin et al. (US 5,768,413) does not teach, determining a myocardium contour according to graph cut of candidate endocardium contours, and a spline fitting to candidate epicardium contours in the absence of shape propagation and applying a plurality of shape constraints to the candidate endocardium contours and the candidate epicardium contours, to determine the myocardium contour, wherein a template is determined by shape propagation of a plurality of magnetic resonance images in a sequence including the magnetic resonance image of interest, in the presence of shape propagation of claims 1, 11 and 21, and determining a plurality of candidate contours, according to a plurality of energy

Art Unit: 2621

functions, to which a plurality of confidence values are assigned and applying a plurality of shape constraints to the candidate endocardium contours and the candidate epicardium contours to determine a myocardium contour of claim 2, combined with other features and elements of the claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Other prior art cited***

3. Prior art of record cited and not relied upon is considered pertinent to applicant's disclosure.

The US Patent 6,757,423 and US Patent 6,708,055 variously teach contour detection related to applicant's invention as claimed.

***Contact information***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shervin Nakhjavan whose telephone number is (703) 306-5916. The examiner can normally be reached on Monday through Friday from 8:00 am to 5:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau, can be reached at (703) 305-4706.

**Any response to this action should be mailed to:**

Assistant Commissioner for Patents  
Washington, DC 20231

**Or faxed to:**

Art Unit: 2621

(703) 872-9306 for *formal* communications, please mark "**EXPEDITED PROCEDURE**"

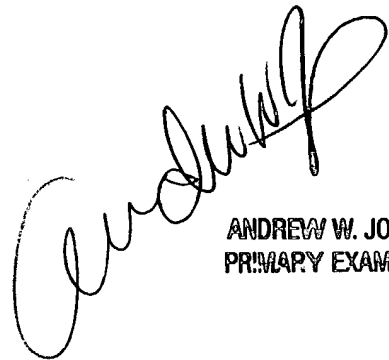
or:

for *informal* or *draft* communications; please label "**PROPOSED**" or "**DRAFT**".

**Hand delivered responses** should be brought to Crystal Park 2, 2121 Crystal drive, Arlington, VA, sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Tech center 2700 customer service office **(703) 306-0377**.

Shervin Nakhjavan S.N  
Patent Examiner  
Group Art Unit 2621  
November 26, 2004.



ANDREW W. JOHNS  
PRIMARY EXAMINER